

REMARKS

In a Final Office Action dated March 21, 2007, the Examiner in charge of this application rejected the pending Claims 5-7 and 9-11 under 35 U.S.C. § 102 and under the doctrine of non-statutory obviousness-type double patenting.

Applicants respond to each of the Examiner's rejections below. All newly presented amendments are intended to place the claims into condition for allowance. In view of the remarks presented herein, applicants respectfully request reconsideration of the merits of this application and timely issuance of a Notice of Allowance.

Claim Amendments

Claims 1 and 9 are amended to further clarify that the MAS instrument 1) synthesizes the probe sets and 2) deposits the hydrophobic barrier on the microarray. Support for this amendment is found for example at page 2, [0015] of the specification. No new matter is added. In view of the amendments the rejections should be reconsidered and withdrawn.

Rejections Under 35 U.S.C. § 102(e)

Claims 5-7 and 9-11 stand rejected under 35 U.S.C. § 102(e) as anticipated by US Patent No. 6,589,726 to Butler *et al.* The Examiner alleged that Butler *et al.* disclosed a method and apparatus for *in situ* synthesis on solid supports, without the use of photoresist, such that the solid support utilizes differences in surface tension to provide reaction sites that anticipates the pending claims. Applicants again respectfully disagree with the rejection.

Butler *et al.* disclose methods for fabricating solid supports. Butler *et al.* do not disclose using maskless array synthesis of both probe sets and hydrophobic sites on the array. As such, Butler *et al.* fail to disclose every limitation and element as recited in the pending claims. Specifically, MPEP § 2131 provides:

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (noting that the identical invention must be shown in as complete detail as is contained in the claims) (emphasis added); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (noting that the elements must be arranged as required by the claim).

Applicants claimed embodiments indicate that all aspects of the microarray (e.g., the probe sets and the hydrophobic barrier) are constructed via a maskless array synthesizer instrument. The Examiner did not show, nor can applicants find, that Butler *et al.* disclosed or contemplated synthesizing probes and depositing hydrophobic barriers with a maskless array synthesizer instrument. It was applicants who first discovered a way to synthesize probes and make hydrophobic barriers on microarrays. Butler *et al.* disclosed that probes, not the hydrophobic barriers, can be synthesized by one of two methods (masked-based photolithography and "drop on demand" techniques; *see* Column 2, line 32 to Column 3, line 31). In Butler, hydrophobic barriers were synthesized by methods that do not involve a maskless array synthesizer instrument. *See* Column 7, line 47 to Column 8, line 10; *see also* Example 2.

Further Butler *et al.* do not enable the claims, as guidance is not provided on how to use MAS technology for both probe synthesis and deposition of hydrophobic material on the desired position of the array. Butler *et al.* do not provide technical direction to the reader on selection of the probes, or placement and arrangement of the probes prior to the deposition of the hydrophobic barrier surrounding each subarray. Butler *et al.* fail to disclose these limitations as well as having one machine perform all of the method steps. Accordingly, Butler cannot anticipate the pending claims. In view of these remarks, applicants respectfully request reconsideration of this rejection as applied to Claims 5-7 and 9-11.

Non-Statutory Obviousness-Type Double Patenting

Claims 5-7 and 9-11 stand provisionally rejected under the judicially created doctrine of non-statutory obviousness-type double patenting in view of Claim 16 of co-pending U.S. Patent Application No. 10/674,768 (the '768 application, filed Sept. 30, 2003). Applicants respectfully disagree.

Applicants once again acknowledge the provisional rejection and the suggestion of filing a terminal disclaimer. However, applicants continue to maintain that the provisional double patenting rejection is not only premature, but simply unwarranted.

While applicants acknowledge that the disclosure of the '768 application mentions the concept of hydrophobic barriers, the claims of the '768 application and the claims of the present application are quite distinct and not overlapping. In fact, the claims of the '768

application are directed to methods for loading samples onto an array, while the methods of the present invention are directed at methods for fabricating arrays with hydrophobic barriers using maskless array synthesizer instruments. Applicants' claimed methods require that the same MAS instrument both synthesize the probes and deposit the hydrophobic barriers surrounding each subarray. Clearly, there are limitations in the claims of each case not in the claims of the other and the Examiner has not demonstrated why these differences are obvious. Not only are the elements of the claims different, in actual practice one method necessarily precedes that of the other. Specifically, the arrays of the '768 application must first be fabricated before samples can be parallel loaded on the array. Thus, the two technologies are distinct and not obvious one in view of the other.

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone applicants' attorney at the number listed below so that such issues may be resolved as expeditiously as possible. For the reasons stated above this application is now considered to be in condition for allowance and such action is earnestly solicited.

Fees

A petition for a three-month extension of time accompanies this response so that it will be deemed to have been timely filed. In addition, please charge a fee for a Request for Continued Examination under 37 C.F.R. § 1.17(e) to Deposit Account No. 17-0055. No additional fees are believed due; however, if any fees are due, in this or any subsequent response, please charge Deposit Account 17-0055.

Respectfully submitted,



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